Call for Papers is Now Open!

Message from the International Scientific Committee Co-Chair

Adrian Law
Professor
National University of Singapore/Nanyang Technological University
Singapore

It is with immense pleasure and anticipation that we extend our warmest welcome to all of you to the 41st IAHR World Congress in Singapore in 2025. The vibrant city-state of Singapore is well known for its long-term commitment to water management, and broad research and development efforts in innovation and sustainability. We are therefore proud to have this important opportunity to act as the global platform for researchers, engineers, and decision makers in the hydro-environment domains to come together to share recent advances and experiences, identify emerging technology trends, and engage in lively debates.

The Congress's theme is "Innovative Water Engineering for Sustainable Development". We aim to foster interdisciplinary dialogue, exchange cutting-edge knowledge, and explore innovative solutions to the world's most pressing water-related challenges. Together, we will delve into the complexities of water engineering, hydroinformatics, climate change adaptions, and much more, with a focus on how innovations can further advance the Sustainable Development Goals (SDGs) for the global community.

Lastly, on behalf of the International Scientific Committee, we also like to extend our sincere gratitude to the organizers, sponsors, and participants for their unwavering support and commitment to advancing the frontiers of hydro-environment engineering. Together, let us make this Congress a resounding success and a catalyst for positive change.

Welcome to Singapore!

Main Theme: Innovative Water Engineering for Sustainable Development

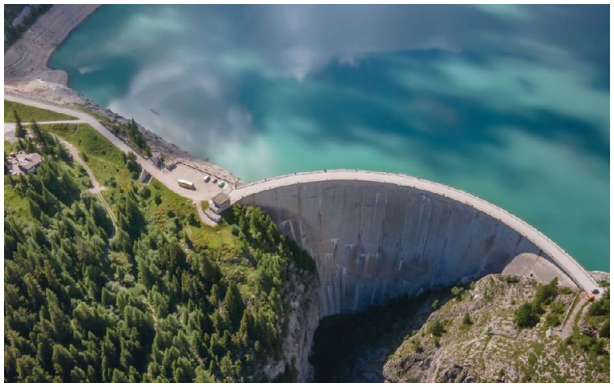
Introduction

The 41st IAHR World Congress 2025 in Singapore is a landmark event that centers around the pivotal theme of innovative water engineering for sustainable development. The global gathering will address the multifaceted challenges posed by the dynamic intersection of water resources management, climate change adaptation, and the intricate interplay between water, energy, food security, and nature. It shall provide a platform for experts, researchers, and practitioners from around the world to converge and share cutting-edge insights, groundbreaking research, and new solutions in the field of water engineering to meet these challenges.

As nations grapple with the effects of climate change, the Congress will delve into innovative water engineering that adapts to the evolving challenges posed by a changing hydro-environment. Another focal point of the Congress will be the exploration of innovative concepts that alleviate the increasing pressure on the water-energy-food nexus and acknowledge the intrinsic linkages between these vital resources. Understanding and optimizing this nexus is crucial for fostering sustainable development, and the Congress shall promote the global exchange and collaboration for integrated approaches that maximise these interconnected resources.

Finally, a key objective of the 41st IAHR World Congress 2025 in Singapore is to address the United Nations Sustainable Development Goals (SDGs) related to water resources. These goals encompass a spectrum of global targets to tackle issues ranging from water scarcity and quality to sanitation and ecosystem preservation. By placing a spotlight on innovative water engineering, the Congress aims to contribute to the advancement of these SDGs in both rural and urban environments, towards a resilient society for the well-being of current and future generations.

Congress Topics:
Theme A: Water Engineering and Technological Innovations



A.1 Climate Change Mitigation
- A.1.1 Water Footprint Reduction
- A.1.2 Incorporation of Water-related Renewable Energies
- A.1.3 Energy Efficiencies to be Gained from Water Uses
- A.1.4 Carbon Sequestration and Storage in Aquatic Environments
- A.1.5 Reduction of Greenhouse Gas Emissions from Water Systems
- A.1.6 Other Related Topics

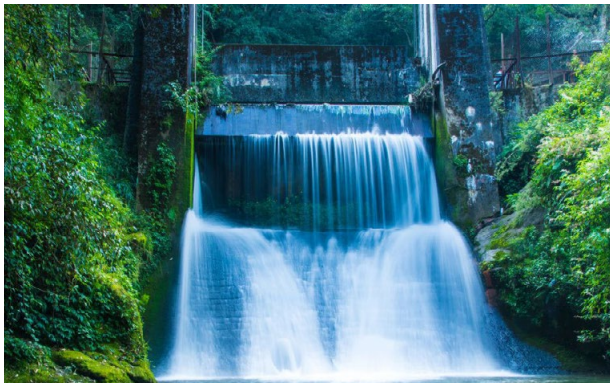
A.2 Improving Resilience against Water Hazards and Natural Disasters
- A.2.1 Coastal Processes and Hazards
- A.2.2 Hydraulic Structures and Processes
- A.2.3 Enhancements in Urban Drainage Systems
- A.2.4 Sediment Transport and Bathymetrical Changes Assessment
- A.2.5 Forecasting and Warning
- A.2.6 Disaster Risk Reduction
- A.2.7 Other Related Topics

Congress Topics:

Theme A: Water Engineering and Technological Innovations

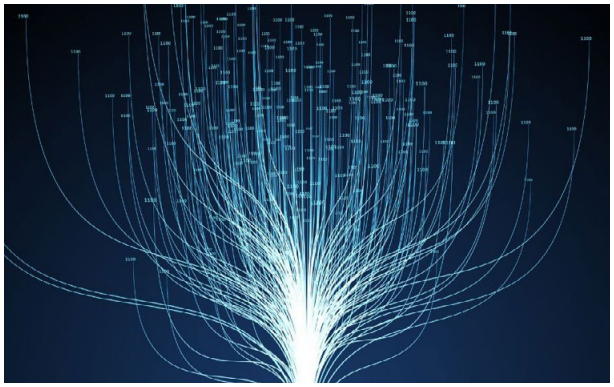
A.3 Water Engineering and Society

A.3.1 Water Resources Management
A.3.2 River Engineering and Management
A.3.3 Reservoirs Management
A.3.4 Urban Hydraulics
A.3.5 Eco- and Environmental Hydraulics
A.3.6 Water Reclamation and Reuse
A.3.7 Seawater Desalination
A.3.8 Cross-boundary Water Transfer
A.3.9 Alternative Water Resources
A.3.10 Multi-objective Optimisation
A.3.11 Other Related Topics



A.4 Water Engineering for Energy Transition and Food Security

A.4.1 Reservoir Renewable Energy Systems (Hydropower, Floating Solar, etc)
A.4.2 Marine Renewable Energy Systems (Wave Power, Tidal Power, Hybrid Solutions, etc)
A.4.3 Offshore Renewable Energy Systems (Offshore Wind Power, Oceanic Current Power, etc)
A.4.4 Water-Energy-Food Nexus
A.4.5 Water Management for Urban Agriculture
A.4.6 Water for Hydrogen Production
A.4.7 Blue Economy
A.4.8 Other Related Topics



A.5 Digital Transformation

A.5.1 Artificial Intelligence (AI) Tools for Analysis and Decision Support under Certainties
A.5.2 Computational Methods for Climate and Meteorology
A.5.3 Computational Methods for Hydraulic and Water Quality Modelling
A.5.4 Computational Methods for Coastal Processes (Waves, Currents, etc.)
A.5.5 Data-Driven Methods and Machine Learning Techniques
A.5.6 Hydroinformatics and Big Data Analytics
A.5.7 Other Related Topics

A.6 Experimental and Field Methods

A.6.1 Advanced Experimental Techniques
A.6.2 Hydrological Measurements (Flow, Groundwater, Precipitation, etc)
A.6.3 Water Quality Sampling and Analysis
A.6.4 Aquatic Ecology and Biological Surveys
A.6.5 Environmental Management and Monitoring
A.6.6 Remote Sensing – Satellite
A.6.7 Remote Sensing – Others (Unmanned Aerial Vehicles (UAV), Radar, etc)
A.6.8 GIS Applications
A.6.9 Data Uncertainty Analysis and Assessment
A.6.10 Other Related Topics

Congress Topics:
Theme B: Water Engineering and Socio-Economic Considerations

B.1 Climate Change Adaptation

- B.1.1 Coastal Protection and Management
- B.1.2 Flood and Droughts Management
- B.1.3 Improvement in Design Guidance under Climate Change
- B.1.4 Revised Engineering Practices in Harmony with Nature
- B.1.5 Resilience Strategies for Extreme Events
- B.1.6 Adoption of Green and Grey Water Infrastructure
- B.1.7 Other Related Topics

B.2 Water and Nature

- B.2.1 Innovative Solutions for City in Nature with Water
- B.2.2 Nature-based Solutions for Upstream Catchments and Small Streams
- B.2.3 Nature-based Solutions for Large Rivers
- B.2.4 Nature-based Solutions for Coastal and Estuarine Waters
- B.2.5 Biodiversity in Aquatic Environments
- B.2.6 Ecosystem Services
- B.2.7 Other Related Topics

B.3 Hydro-Environment Engineering Culture

- B.3.1 Hydro-Environment History and Heritage
- B.3.2 Hydro-Environment Development and Cooperation
- B.3.3 Hydro-Environment Education
- B.3.4 Coastal Resilience and its Definitions
- B.3.5 Social Hydrology and Citizen Science
- B.3.6 Other Related Topics

International Scientific Committee

The International Scientific Committee shall be jointly co-chaired by IAHR and Singapore.

Representatives include:

Members

Prof Adrian Law, Executive Director, Coastal Protection and Flood Resilience Institute (CFI) Singapore
Hazel Khoo, Director, Coastal Protection Department, PUB, Singapore
Philip Liu, National University of Singapore, Singapore
Vladan Babovic, National University of Singapore, Singapore
David McCarthy, Monash University
Stefan Felder, UNSW Sydney
Lloyd Chua, Deakin University
Sandra Soares-Frazao, Universite Catholique de Louvain
Tobias Bleninger, Federal University of Paraná
Majid Mohammadian, University of Ottawa
Bryan W. Karney, University of Toronto
Christos Katopodis, Katopodis Ecohydraulics Ltd
Gregory Lawrence, University of British Columbia
David Zhu, Ningbo University / University of Alberta
Zhiguo He, Zhejiang University
Pengzhi Lin, Sichuan University
Dongdong Shao, Beijing Normal University
Wenxin Huai, Wuhan University
Yangwen Jia, China Institute of Water Resources and Hydropower Research (IWHR)
Jianyun Zhang, Nanjing Hydraulic Research Institute
Qiuwen Chen, Nanjing Hydraulic Research Institute
Shijian Fu, Chongqing Normal University
Yujun Yi, Beijing Normal University
Qiuhua Liang, Zhengzhou University
Nian Sheng Cheng, Zhejiang University
Haifeng Jia, Tsinghua University
Fang He, Zhejiang University
Zhengzhi Deng, Zhejiang University
Jochen Aberle, Leichtweiß-Institute for Hydraulic Engineering and Water Resources
Silke Wieprecht, University of Stuggart
Ting Fong May Chui, The University of Hong Kong
Mohamed S. Ghidaoui, The Hong Kong University of Science and Technology
Huan-Feng Duan, The Hong Kong Polytechnic University
Krishnan Murali, Indian Institute of Technology Madras
Subhasish Dey, Indian Institute of Technology Jodhpur
Sannasi Sannasiraj, Indian Institute of Technology Madras Corrado Gisonni, Università della Campania 'Luigi Vanvitelli'
Claudia Adduce, Roma Tre University
Silvia Meniconi, University of Perugia
Claudio Comoglio, Politecnico di Torino
Hitoshi Tanaka, Tohoku University
Norio Tanaka, Saitama University
Sung-Uk Choi, Yonsei University
Jin-Hwan Hwang, Seoul National University
Eun-Sung Chung, Seoul National University of Science and Technology
Tae-Woong Kim, Hanyang University
Joseph Hun-Wei Lee, Macau University of Science and Technology
Chun Kiat Chang, River Engineering and Urban Drainage Research Centre (REDAC), Universiti Sains Malaysia
Gerald Augusto Corzo, IHE Delft Institute for Water Education
Ellis Penning, Deltares
Bas Jonkman, TU Delft
Asaad Shamseldin, University of Auckland
Mark Davidson, University of Canterbury
José Maria Santos, University of Lisbon
Pilar García-Navarro, Universidad de Zaragoza, Q5018001G
Francisco Martínez-Capel, Universitat Politècnica de València
Anton J. Schleiss, Ecole Polytechnique Fédérale de Lausanne (EPFL)
Volker Weitbrecht, ETH Zürich
Christina Tsai, National Taiwan University
Howard Hao-Che Ho, National Taiwan University
Chia-Ren Chu, National Central University
Dong-Jiing Doong, National Cheng Kung University
Shih-Chun Hsiao, National Cheng Kung University
Kim Irvine, Thammasat University
Roger Falconer, Cardiff University
Thorsten Stoesser, University College London
Vladimir Nikora, University of Aberdeen
Dubravka Pokrajac, University of Aberdeen
Jaan Pu, University of Bradford
Fabian Bombardelli, University of California, Davis
Harindra Joseph Fernando, University of Notre Dame
Gary Parker, University of Illinois Urbana-Champaign
Heidi M. Nepf, Massachusetts Institute of Technology
George Constantinescu, IIHR - Hydroscience & Engineering, The University of Iowa
Panayiotis (Panos) Diplas, Lehigh University
Gregory Pasternack, University of California, Davis
Oliver Fringer, Stanford University
Zhenhua Huang, University of Hawai'i at Mānoa
Robert Ettema, Colorado State University
Thi Thanh Nga Pham, Vietnam Institute of Meteorology, Hydrology, and Climate Change (IMHEN)

Reviewers

Benjamin Dewals, University of Liege
Pieter Rauwoens, KU Leuven
Eduardo Yassuda, Tetra Tech South America
Carlos Galvao, Federal University of Campina Grande
Van-Thanh-Van Nguyen, McGill University
Sylvie Spraakman, City of Vancouver
Ahmad Shakibaeinia, Polytechnique Montréal
Shooka Karimpour, York University
Ioan Nistor, University of Ottawa
Hossein Bonakdari, University of Ottawa
José Adriasola-Velasco, Bechtel
Lu Wang, Sichuan University
Qian Yu, China Institute of Water Resources and Hydropower Research
Gensheng Zhao, Nanjing Hydraulic Research Institute
Dawei Guan, Hohai University
Juan Pablo Rodríguez Sánchez, Universidad de los Andes
Gordon Gilja, University of Zagreb
Pavel Rudolf, Brno University of Technology
Jeffrey A. Tuhtan, Tallinn University of Technology
Florian Cordier, EDF R&D LNHE
Kamal El Kadi Abderrezzak, EDF R&D LNHE
Damien Violeau, EDF R&D LNHE
Jerome Le Coz, National Research Institute for Agriculture, Food and Environment (INRAE)
Katinka Koll, Technical University of Braunschweig
Ali Pourzangbar, Karlsruhe Institute of Technology
Andreas Kron, Karlsruhe Institut of Technology
Mario Franca, Karlsruhe Institute of Technology
Stefan Haun, University of Stuttgart
Eva Fenrich, SystainAbility
Manousos Valyrakis, Aristotle University Of Thessaloniki
Muhammad Waqar, The Hong Kong University of Science and Technology
Moez LOUATI, The Hong Kong University of Science and Technology
Nicola Paccanelli, Ove Arup
Ravindra Vitthal Kale, National Institute of Hydrology Roorkee
Zulfequar Ahmad, IIT Roorkee
Andrea Sulis, University of Sassari
Caterina Capponi, University of Perugia
Bruno Brunone, University of Perugia
Gabriele Freni, Kore University of Enna
Orazio Giustolisi, Polytechnic University of Bari
Michele Mossa, Polytechnic University of Bari
Cristiana Di Cristo, University of Naples Federico II
Nadia Penna, Università della Calabria
Gioele Ruffini, Sapienza University of Rome
Angelo Leopardi, University of Cassino and Southern Lazio
Alessio Radice, Politecnico di Milano
Kenichiro Kobayashi, Saitama University
Satoru Oishi, Kobe University
Daisuke Nohara, Kajima Technical Research Institute
Dalila Loudyi, Hassan II University of Casablanca
Yorick Broekema, Deltares
David Ferras, IHE Delft
Arthur Mynett, IHE Delft and Delft University of Technology
Franz Tscheikner-Gratl, Norwegian University of Science and Technology
Tomasz Dysarz, Poznan University of Life Sciences
Joanna Wicher-Dysarz, Poznan University of Life Sciences
Michael Nones, Institute of Geophysics, Polish Academy of Sciences
Tiago Ferradosa, University of Porto
F. Carvalho Rita, University of Coimbra
Anton Bergant, Litostroj Power
John Okedi, University of Cape Town
José M. Carrillo, Universidad Politécnica de Cartagena
P. Amparo López-Jiménez, Universitat Politècnica de València
Modesto Pérez-Sánchez, Universitat Politècnica de València
Natalia Garcia Estevez, ACCIONA Ingenieria
Ismail Albayrak, ETH Zurich
Schalko Isabella, Swiss Federal Research Institute WSL
Zhihua Xie, Cardiff University
Iacopo Carnacina, Liverpool John Moores University
Daniel Valero, Imperial College London
Valentin Heller, University of Nottingham
Reza Ahmadian, Cardiff University
Jennifer G Duan, University of Arizona
Marian Muste, University of Iowa
Ibrahim Demir, University of Iowa
Constantinescu George, University of Iowa
Ramesh Teegavarapu, Florida Atlantic University
Binbin Wang, University of Missouri
Yifan Zheng, Bechtel Corporation
David Wegner, Woolpert Engineering
Xiaofeng Liu, Pennsylvania State University
Arturo Leon, Florida International University

Call for Abstracts Submission

Key dates & deadlines

2024
1 August – Abstract Submission Opens
31 October – Abstract Submission Closes

2025
15 January – Notification to Authors
15 February – Acceptance by Authors
15 March – Full Paper Submission Deadline
31 March – Deadline for Author Registration

IAHR and the Congress Organising Group invite you to take part in the 41st IAHR World Congress in Singapore from 22 to 27 June 2025. Themed "Innovative Water Engineering for Sustainable Development", the Congress will focus on the importance of innovative water engineering towards meeting the Sustainable Development Goals (SDGs) and targets related to water resources. By placing a spotlight on innovative water engineering, the event aims to contribute to the advancement of these SDGs in both rural and urban environments, towards a resilient society for the well-being of current and future generations.

The Congress shall be organized around two main themes: Water Engineering and Technological Innovations and Water Engineering and Socio-Economic Considerations, together with the relevant subthemes. We are pleased to announce that the online extended abstract submission process is now open. All extended abstracts will be peer-reviewed, and the Congress' International Scientific Committee (ISC) will inform contributors if their abstract has been selected by January 2025. Authors who would like to write a full paper for proceedings (not necessary for participating at the conference if not wished by the author) will then have an 8-week period to submit their full paper, after which they will be reviewed for final acceptance. For the full list of Congress topics, visit: **https://2025.iahr.org/Home/Themes**

The 41st IAHR World Congress organizers look forward to your contributions and meeting you all in June 2025 in Singapore.

Access the full list of sub-topics under each theme, abstract template and submission process, visit: https://2025.iahr.org/Home/Submissions

Organisers:

IAHR AIRH International Association for Hydro-Environment Engineering and Research
Hosted by Spain Water and IWHR, China

PUB SINGAPORE'S NATIONAL WATER AGENCY

NUS National University of Singapore

NANYANG TECHNOLOGICAL UNIVERSITY

Version 2.0, as of August 2024. This brochure is printed on environmentally friendly paper.